

Institutions and Capacity Building for the Evolution of IPR Regime in India: Protection of Plant Varieties and Farmers' Rights

Sudhir Kochhar[†]

Indian Council of Agricultural Research, Krishi Bhawan, 1, Dr Rajendra Prasad Road, New Delhi 110 001

Received 7 January 2008

One of the primary steps towards the development and evolution of the national IPR regime could be building the institutions and capacity in various fields related to the IPR area, such as, research and development, enterprise, industry, general administration, and judiciary. A harmonious, efficient and effective institutional mechanism for building capacity and trained human resource would be desirable so to derive full advantage of the Indian IPR regime. There are five central ministries/departments besides two national authorities that oversee the implementation of various IPR legislations in the country. The largest nodal point is the Intellectual Property India, administered by the Patent Office and controlled by the Ministry of Commerce and Industry. The Protection of Plant Varieties and Farmers' Rights in the country is at a juvenile stage and requires building its institutional mechanism and capacity. This paper discusses various issues and priorities related to this legislation with an urge to develop/enhance linkages and working relations between the PPV&FR Authority/Registry and Intellectual Property India as well as other nodal agencies/R&D organizations.

Keywords: IPR regime, PPV&FR Authority, CBD, TRIPS Agreement, PPV&FR Act of India, UPOV, Institutional and capacity building

The Indian intellectual property rights (IPR) and biodiversity related legislative instruments are compatible, as per requirement, with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) and the Convention on Biological Diversity (CBD), respectively.¹ The principal exercise² has been completed by 1st January 2005 i.e. within the time limits agreed to by the Members of the World Trade Organization (WTO).³ As a result, IP is gaining a higher profile in India, with a major economic transition and an increased participation of the national and global players. Macro-indicators to substantiate this important outcome are the recent mergers, acquisitions and investments by major multinationals in diverse fields in the country and also by major Indian pharma in other countries.⁴ There is a need for greater understanding of the IPR laws in India among various players and stakeholders, for their proper application and enforcement. One of the primary steps towards the development and evolution of the national IPR regime could be institutions and capacity building in various fields related to or concerned with the IPR area, such as, research and development, enterprise,

industry, general administration, and judiciary. In this communication, effort is made to discuss and understand the need for a harmonious institutional mechanism/capacity for the application of the Indian IPR laws, with a focus on the implementation of the Protection of Plant Varieties and Farmers' Rights in the country.

Institutional Mechanism to Administer the Indian IPR Acts

India has the needed institutional capacity for intellectual property policy making, development of legislative instruments, administration and enforcement of IPR laws and is capable of extending technical co-operation to other developing and least developed countries in the area.⁵ However, the challenge before the country in the post-2005 Scenario⁶ is that of proper application and effective enforcement of these laws. Four out of the seven IPR related Indian Acts, namely, the Patents Act, 1970, the Trade Marks Act, 1999, the Geographical Indications of Goods (Registration and Protection) Act, 1999, and the Designs Act, 2000, are administered by the Controller General of Patents, Designs and Trademarks.⁷ The Department of Industrial Policy and Promotion in the Ministry of

[†]Email: skochhar.icar@nic.in

Commerce and Industry is the nodal agency of the central government for the governance of these laws. The Copyright Act, 1957 is administered by the Director and Registrar of Copyrights⁸ in the Department of Secondary and Higher Education, Ministry of Human Resource Development. The Semiconductor Integrated Circuits Layout-Design Registry⁹ grants IPR on layout-designs of integrated circuits under the Semiconductor Integrated Circuits Layout-Design Act, 2000 wherein the Department of Information Technology in the Ministry of Communications and Information Technology is the nodal agency. The Protection of Plant Varieties and Farmers' Rights Act, 2001 is administered by the Protection of Plant Varieties and Farmers' Rights Authority/Registry¹⁰, and the Department of Agriculture and Cooperation is the nodal agency. As of now, there is no specific IPR Act to provide protection for undisclosed information (trade secret). Rather, it is covered by the Indian Contract Act of 1872, and common law. Ministry of Law and Justice is the nodal agency for this purpose.

In addition, the biodiversity-IPR related matters are covered under the Biological Diversity Act, 2002 by the National Biodiversity Authority wherein the Ministry of Environment and Forests is the nodal agency. Further, in respect of traditional knowledge, two ministries of the central government, namely, the Ministry of Commerce and Industry and the Ministry of Human Resource Development, act as the nodal agencies for different matters. Thus, the Indian IPR institutional mechanism may be summarized as given in the table 1.

Protection of Plant Varieties and Farmers' Rights

From enactment in October 2001 to the implementation of the registration process in May 2007, the Protection of Plant Varieties and Farmers' Right Act, 2001 (53 of 2001) perhaps took the longest time among the Indian IPR Acts. Nevertheless, the Plant Variety Registry is already accepting applications for registration and protection of new and extant varieties of the 12 crop species notified by central government under Section 29(2) of the Act. The PPV&FR Authority has appointed seven task forces until December 2007 to further develop national test guidelines of various crop species to be notified in future or to recommend to the Authority on the implementation of other specific provisions of the Act, such as, benefit sharing. Nine issues of the *Plant Variety Journal of India*, a priced publication of the

PPV&FR Authority, have been already brought out until November 2007 to disseminate public knowledge related to the PPV&FR Act, and also to publish information on accepted applications. Soft copies of the journal are, however, presently available on the official website of the Authority.

The *sui generis* PPV&FR Act of India has the convergence of provisions made under the TRIPS Agreement, the Convention for the Protection of New Varieties of Plants (UPOV) and the traditional/conventional privileges and rights already available to Indian farmers and farming communities in the civil society. However, this Act also has substantial deviation from the UPOV Acts of 1978 and 1991 and, hence, it could not serve, so far, as a relevant instrument of India's accession to the UPOV Convention. There are two unique provisions of the *sui generis* legislation developed for the first time by India. These are: (i) protection of extant varieties, which include previously notified varieties under the seed law and other varieties of common knowledge/public domain, and (ii) farmers' rights, which are quite elaborate and recognize the farmers as conservers and providers of genetic resources, breeders of farmer/new varieties, and users/cultivators of the varieties protected under the law, having the right to use their farm-saved seed in a variety of ways, except as branded seed. Further, to affirm such privileges and rights to farmers as the availability of farm saved seed for further propagation, sharing, exchanging or even selling except for as branded seed, the Indian legislature has imposed a ban on the grant of exclusive right over such new plant varieties under this Act as may carry the genetic use restriction technology (GURT), more commonly known as the terminator gene.

Global Understanding and Experience on Plant Variety Protection

The UPOV member countries have more than 66,700 plant variety titles in force up to the year 2005 (Table 2). Presently, 65 countries including one regional cooperation (European Union) are party to UPOV Convention. Countries of South Asia, South East Asia, and North Africa have the least representation in UPOV; and India, Thailand and Philippines among these have already developed their own *sui generis* legislations for the protection of plant varieties. The UPOV system already has the experience on developing standards and/or according protection to a total list of 795 botanical taxa, many of

Table 1—Broad institutional mechanism of the Indian IPR Regime

S.No	Area	Legislation	Administration authority	Nodal agency
1	Patent	The Patents Act, 1970	The Controller General of Patents Designs and Trademarks (CGPDT)/Controller of Patents	
2	Design	The Design Act, 2000	The CGPDT/Registrar of Designs	Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry (MoCI)
3	Trade Mark	The Trade Marks Act, 1999	The CGPDT/Registrar of Trademarks	
4	Geographical Indication	The Geographical Indications (Registration and Protection) Act, 1999	The CGPDT/Registrar of Geographical Indications	
5	Copyright	The Copyright Act, 1957	Director and Registrar of Copyright	Department of Secondary and Higher Education, Ministry of Human Resource Development (MHRD)
6	Integrated Circuit Design	The Semiconductor Integrated Circuits Layout-Design Act, 2000	Registrar, Semiconductor Integrated Circuits Layout-Design Registry	Department of Information Technology, Ministry of Communications and Information Technology (MoCIT)
7	Plant varieties	The Protection of Plant Varieties and Farmers' Rights Act, 2001	Protection of Plant Varieties and Farmers' Rights (PPV&FR) Authority/Registry	Department of Agriculture and Cooperation, Ministry of Agriculture
8	Undisclosed information	The Contract Act, 1872; Common (Civil) Law	Civil Courts	Ministry of Law and Justice (MoLJ)
9	Biodiversity	The Biological Diversity Act, 2002	National Biodiversity Authority (NBA)	Ministry of Environment and Forests (MoEF)
10	Traditional knowledge	None	Secretary of the concerned Ministry (ies)	MoHRD; MoCI

Table 2—Cumulative plant variety protection statistics of the countries party to UPOV system

Year	Applications filed by			Titles issued to			Titles ceased to be in force	Titles in force
	Residents	Non-residents	Total	Residents	Non-residents	Total		
2001	7,387	3,587	10,974	5,438	2,276	7,714	4,608	55,002
2002	7,076	4,249	11,325	5,933	2,656	8,589	5,052	58,539
2003	7,678	4,306	11,975	5,383	3,086	8,460	5,554	61,537
2004	7,875	4,161	12,036	5,780	3,362	9,142	6,146	64,300
2005	8,219	4,446	12,665	5,378	3,090	8,473	5,971	66,772

Source: UPOV

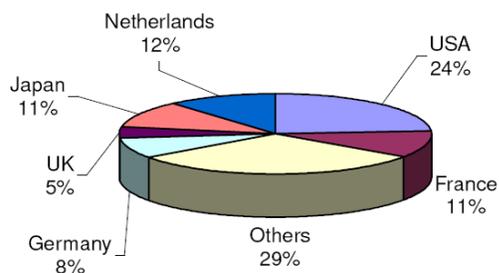
which are duplicates among genera and species. Nevertheless, this represents an extremely negligible proportion of the biological diversity occurring in the plant kingdom. The provision, however, is that all botanical taxa have to be covered under plant variety protection. The UPOV 1978 requires that countries party to this system should initially protect new varieties of at least 5 taxa, and the number of taxa should be increased to 10 in 3 years, 18 in 6 years, and 24 in 8 years of their joining UPOV. The initial number of taxa to be protected by parties to UPOV 1991 is 10 but they should cover all genera & species by 10 years. Another interesting observation is that more than half the titles granted in the UPOV system

have gone to new varieties of ornamentals (52%), followed by cereals (15%) and vegetables (8%).

Further, USA had the largest share of valid PVP certificates; followed by Netherlands (12%), France (11%) and Japan (11%) (Fig. 1).

National PVP Systems of China and India

China joined UPOV 1978 system in April 1999. By the year 2004, it had notified 5 lists of agricultural and 4 lists of forest plant species, covering 119 genera and species of 41 agricultural and 78 forest plants.¹¹ The number of applications received for protection of plant varieties in agriculture were 2046, including 1,875 for field crops, 87 for vegetables, 52 for fruit



Source: Srinivasan 2005

Fig. 1—Share of valid PVP certificates in different countries in 2000

trees and 32 for decorative plants; and in forestry these were 305, including 253 for decorative arbors. On the other hand, India has started its registry process with 12 crop species in May 2007. All the notified species cover only food crops i.e. cereals, millets and pulses whereas the country has commercial and export potential for several ornamental and horticultural plants, spices and condiments, and other species. The PPV&FR Authority is gradually developing institutional capacity and appointing task forces to recommend the national test guidelines and other course of action under the Act.

Implementation of Farmers' Rights

The most uphill task in implementation of the PPV&FR Act is the realization of farmers' rights. The areas to be covered, as identified by the Authority projected in its website include: (i) recognition and reward to farmers/farm communities, (ii) registration of farmers' varieties, including determination of standards for testing their distinctiveness, uniformity and stability, and (iii) compensation to farmers for under-performance of protected plant varieties. Overall, there is an urgent need of providing genetic and legal literacy to farmers. This should include, creating awareness among the farming families and rural communities on various provisions of the Act, particularly, those relating to the role and rights of farmers as conservers, breeders, and cultivators. In accordance with the provisions made under the Act, the PPV&FR Authority has already accorded Plant Genome Saviour Community Recognition National Awards to five farmers/farming communities in February 2007 for having conserved potentially valuable genetic resources of notified species in their farms (Table 3). Other issues are being deliberated at various platforms in the country on behalf of the Authority.

Table 3—Communities honored by PPV&FR Authority

Farmer(s)/Farming community	Sponsored by	Crop
Rung farmers community of Vyas valley	Non-Government Organization (NGO) from Chennai	Wheat
Rice farming communities, Palakkad district, Kerala (Thenkurissy Panchayath)	NGO from Palakkad district, Kerala	Rice
Tribal and rural communities of Jeypore (Orissa)	Local self-government from Koraput district, Orissa	Rice
Individual farmer - Sunda Ram Verma	Farmer	Bajra, Guar, Cumin, etc.
Women's group, Swathi Samudaya Beeja Bank (community seed bank)	NGO from District Tumkar, Karnataka	White horse gram

Source: PPV&FR Authority

Institutional and Capacity Building Issues

Some of the institutional issues before the country in the administration and enforcement of IPR, particularly, protection of plant varieties, may be recapitulated as given below:

As the PPV&FR Act provides protection of cultivated as well as the wild varieties of plants¹², it is imperative that registration mechanism be available for both agricultural and wild species. Broadly, the latter is covered under biological diversity rather than plant varieties! The allocation of business related to agriculture and biodiversity is attributed to two different central ministries i.e. the Ministry of Agriculture and the Ministry of Environment and Forests. It may be seen from the experience of China that the country has established a bi-focal nodal mechanism. The Ministry of Agriculture and State Forestry Administration are respectively responsible for the protection of plant varieties in their area domain. In this way, China has definitely shown efficiency in the implementation of their PVP law.

On the other hand, in India, the general assignment/orientation of the MoEF is towards the implementation of the biodiversity matters rather than disposing any IPR business. The MoCI, on its part, undertakes all tasks related to the protection of industrial property rights, including capacity building and human resource development. The Ministry has ambitious plan to strengthen the Intellectual Property

Training Institute at Nagpur to cater to the HRD needs of the IPR examiners, attorneys, research managers, bureaucrats, and judiciary persons in the country. The PPV&FR Authority needs to develop an active collaboration and linkage with the Intellectual Property India i.e. the nodal mechanism for the implementation of the patent, design, trademark and geographical indication laws. Linkages with public research and development organizations, such as, Indian Council of Agricultural Research (ICAR) and the Council of Scientific and Industrial Research (CSIR) will also be important for the PPV&FR Authority/Registry to enhance institution and capacity building for effective and efficient implementation of the Act.

Realizing the need to enhance institutional capacity and trained human resource for the implementation of the plant variety protection and the farmers’ rights provided in the Act, the PPV&FR Authority has made collaborative arrangements with ICAR/Indian Agricultural Research Institute (IARI), a deemed-to-be-university for human resource development, particularly, to impart training to develop skills in the professionally qualified (PQ) persons, scientific manpower, farmers, NGOs, extension workers, and other public and private agencies.¹³ These trainings are organized for different durations, ranging from 3-5 days to 10 weeks (Table 4).

The PPV&FR law has an overriding effect over other laws as per Section 92 of the Act. However, there could be issues of overlapping interpretations in the PVP law with some other legislations, such as, the Emblems and Names (Prevention of Improper Use) Act, 1950, the Seeds Act, 1966, the Trade Marks Act, 1999, the Geographical Indications of Goods (Registration and Protection) Act, 1999, and the Biological Diversity Act, 2002. This needs to be more clearly understood and further taught. Similarly, in respect of benefit sharing [Section 26(7)] and recovery of arrears of land revenue [Section 35(3)],

the Indian Code of Civil Procedure (CPC), and various State laws related to land/revenue will be applicable. A proper application of the PPV&FR Act would also require a better understanding of the TRIPS Agreement, the CBD and the International Code of Nomenclature for Cultivated Plants, 1995.

Enhancing Effectiveness and Efficiency

Some important issues needing urgent attention of the managers and practitioners of PPV&FR law in the country include development of understanding of the administrative action and the civil justice system for its enforcement. It is important to appreciate that multilateral cooperation mechanisms for IPR protection in various member countries, such as, the Patent Cooperation Treaty (PCT) for patents, are being effectively used in India for moving towards cost reduction and administrative efficiency. It may be noted in this context that although India is an observer at the UPOV system of PVP, yet as per this arrangement, the Indian breeders still cannot avail the UPOV multilateral platform for protection of their varieties in other countries party to the convention. Therefore, it would be appropriate to take further steps to negotiate for accession to UPOV and this multilateral platform for PVP. This would benefit not only the Indian breeders but also the world agriculture. The PPV&FR Authority may also take concrete cooperation initiatives with other departments, particularly, Intellectual Property India, in IPR administration, training and IPR statistical data collection. Efforts also need to be strengthened in the national interest, for policy research and analysis on PPV&FR subjects, including benefit sharing, technology transfer, impact of PPV&FR, etc.

It may be highly relevant to take immediate steps towards declaring all extant varieties notified under Section 5 of the Seeds Act, 1966, which have not completed 15 years from the date of notification, as the varieties registered and protected under the Act.

Table 4—Collaborative training programmes sponsored by the PPV&FR Authority to enhance capacity building

S.No.	Beneficiaries	Subject of training	Duration
1	Professionally Qualified (PQ) personnel; public and private sectors	In-depth training to conduct and assist in the DUS testing and related activities for the grant of protection to plant varieties	10 weeks
2	Scientific manpower	Advanced training to undertake studies on various issues related to DUS testing and protection of plant varieties	4 weeks
3	Farmers, NGOs, Extension workers; Public and private agencies	Training to impart basic knowledge about the procedures of PVP	3-5 days

This step could indeed accelerate the legitimate use of these locally adapted genotypes in the development of essentially derived varieties with guided improvement through the biotechnological applications for specific characteristics, such as, resistance to particular abiotic or biotic stresses or improved quality. The second important immediate step could be to provide a mail box arrangement for receiving applications for the protection of varieties of ornamentals, horticultural crops, spices and condiments, etc., which, although important for commerce and international trade, are not yet notified under Section 29(2) of the PPV&FR Act. These measures would possibly help in efficiently meeting the objectives of the PPV&FR legislation i.e. accelerated agricultural development, stimulated investment for R&D in public and private sectors for development of new plant varieties, growth of seed industry, and ensured availability to farmers of high quality seeds and planting material in the country.

Acknowledgment

The author expresses his sincere acknowledgement to Dr Mangala Rai, Secretary, Department of Agricultural Research and Education (DARE) and Director General, ICAR and Dr P L Gautam, Deputy Director General (Crop Science), ICAR, for having provided him training and opportunities to work in the subject area.

References

- 1 TRIPS Agreement Article 41.1 required the WTO Members to ensure that their IPR laws are TRIPS-compatible. However, Article 65 further provided a transition period to member countries like India that did not have a product patent regime when the WTO came into force, to delay the grant of product patents under their patent law, by 10 years. The Convention on Biological Diversity (CBD) Articles 15(7), 16(3), 16(4), and 19(1) also required each Contracting Party to take appropriate legislative, administrative or policy measures for access to biodiversity, benefit sharing and IPR-compatible technology transfer.
- 2 The Patents Act, 1970, the Trade Marks Act, 1999, the Designs Act, 2000 and the Copyrights Act, 1957 have been harmonized with the TRIPS Agreement for appropriate amendment(s); whereas the Geographical Indications (Registration and Protection) Act, 1999, the Protection of Plant Varieties and Farmers' Rights Act, 2001, and the Semiconductor Integrated Circuits Layout-Design Act, 2000 have been newly enacted. The protection of undisclosed information (trade secret), however, continues to be protected under common law. The Biological Diversity Act, 2002 also has IPR related provisions.
- 3 India is member of WTO since its inception.
- 4 World IP contacts handbook: Country reports: India, *Managing Intellectual Property*, <http://www.managingip.com>.
- 5 The implementation phase of the various IP laws brought in conformity with the international agreement by the country.
- 6 <http://www.patentoffice.nic.in>, <http://www.ipindia.nic.in>, <http://www.girindia.in>.
- 7 <http://www.education.nic.in/copyright>.
- 8 <http://www.mit.gov.in>.
- 9 <http://www.plantauthority.gov.in>.
- 10 Srinivasan C S, The international trends in plant variety protection, *eJADE*, 2 (2) (2005) 182-220, www.fao.org/es/esa/eJADE.
- 11 Rufia Hu, Huang J, Pray C and Huang J, The developments of plant variety applications in China, *Journal of Intellectual Property Rights*, 11 (4) (2006) 260-268.
- 12 Section 2(l) of the PPV&FR Act .The farmer' varieties are also protectable, as per Section 14(c) of the Act.
- 13 Contact person: Dr Malavika Dadlani, Head, Division of Seed Science & Technology, IARI, Pusa, New Delhi 110 012.